Vital Capacity (VC) tests were performed just before and at 2, 5, 10, 15 and 30 min following IBPB. Statistical analysis of the results was made using Student=s t test and ANOVA.

Following IBPB respiratory function decreased by approximately 13-38 % (Table) but SpO_2 did not decrease below 90%. In both groups there were no cardiovascular changes or other adverse effects. Our results are in accordance with Gottardis *et al.*, Urmey *et al.* and Dagli *et al.*[3B5]

Both approaches to IBPB produce moderate but similar decreases in respiratory function.

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References

1 *Winnie AP.* Interscalene brachial plexus block. Anesth Analg 1970; 49: 455–66.
2 *Pippa P, Cominelli E, Marinelli C, Aito S.* Brachial plexus block using the posterior approach. Eur J Anaesthesiol 1990; 7: 411–20.
3 *Urmey WF, Gloeggler PJ.* Pulmonary function changes during interscalene brachial plexus block: effects of decreasing local anesthetic injection volume. Reg Anesth 1993; 18: 244–9.
4 *Gottardis M, Luger T, Flörl C, et al.* Spirometry, blood gas analysis and ultrasonography of the diaphragm after Winnie's interscalene brachial plexus block. Eur J Anaesthesiol 1993; 10: 367–9.
5 *Dagli G, Güzeldemir ME, Acar HV.* The effects and side effects of interscalene brachial plexus blockade by posterior approach. Reg Anesth Pain Med 1998; 23:87–91.

A "last ditch" airway, revisited

To the Editor:

When faced with unanticipated airway loss, and in the position of "can't intubate, can't ventilate" one may have to resort to cricothyroidotomy to regain access to the airway.[1] If a commercial cricothyroidotomy kit is not readily available, the ability to improvise may be life-saving. Fisher has described an effective improvised cricothyroidotomy cannula consisting of the spike that connects one of the arms of a Y-type blood administration set to the solution bag.[2] Whereas the availability of Y-type blood tubing is usually limited to critical care settings, "single" intravenous tubing sets are more widely distributed in hospitals, ambulances and even some private medical and dental offices.

We suggest that the spike from a 'single' fluid administration set can be used as an improvised cricothyroidotomy cannula:

1. Cut the drip chamber ~3 cm distal to the spike.
2. After pre-incising the skin over the cricothyroid membrane, stabilize the trachea with one hand and insert the spike through the cricothyroid membrane into the trachea.[2]
3. Aspirate from the spike to confirm placement in the trachea. Note that the barrel of most 5cc syringes would provide a sealed fit in the cut end of the drip chamber (Figure).
4. Ventilate as necessary by fitting the 22 mm gas outlet of a self-inflating bag over the cut end of the drip chamber (Figure).

The internal diameter of the spike is the same as that tested by Fisher.[2] It's airflow characteristics are therefore expected to be the same.

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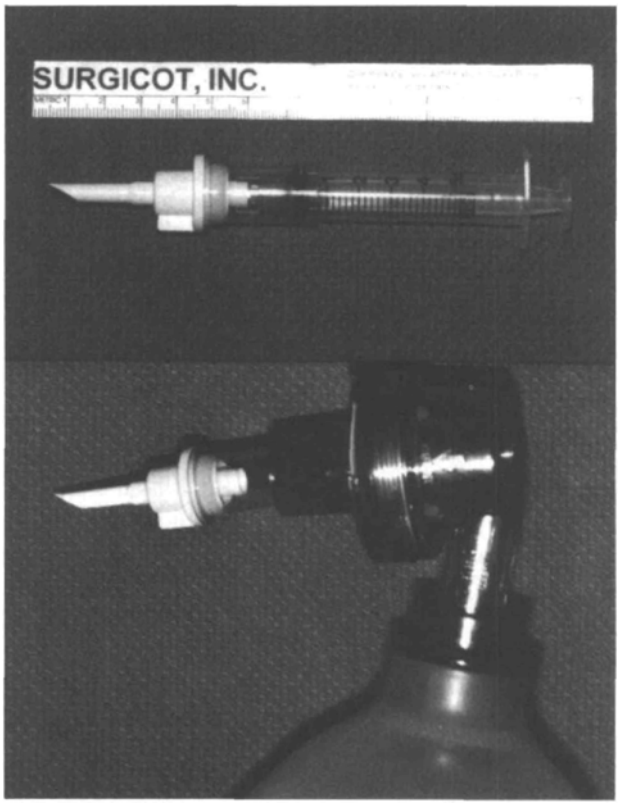

FIGURE Improvised cricothyroidotomy cannula

References

1 American Society of Anesthesiologists Task Force on Management of the Difficult Airway. Practice Guidelines for Management of the Difficult Airway. Anesthesiology 1993; 78: 597–602.

2 *Fisher JA.* A "last ditch" airway. Can Anaesth Soc J 1979; 26: 225–30.

Cardiac ischemia and desflurane

The four fatalities described by Murray and Luney[1] might represent a sympathetically-mediated interaction between desflurane and beta adrenergic inotropic drugs. They also remind us that increasing myocardial oxygen consumption in coronary artery disease patients may be hazardous. Unfortunately, the cardiac outputs/hemodynamic profiles prior to instituting inotropic agents were not reported.

In retrospect, although these operations were not cavity/vascular, a cardiac epidemiologist might have suggested more extensive preoperative investigation to assess cardiac ischemic risk because of the proposed lengths of the surgery. The post-mortem examination in patient #2 indicates recent plaque disruption in addition to extensive occlusive disease. If present, the former may have been elucidated preoperatively by angiography, and the latter by exercise/thallium tests.

This report is valuable because of the high prevalence of coronary artery disease and the common use of desflurane, a newer anesthetic, in a wide variety of patients. Even in coronary artery bypass operations, there is sometimes pressure to begin inotropic medicines prior to instituting cardiopulmonary bypass. The report warns that this may be hazardous during desflurane anesthesia.

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1 *Murray SM, Luney SR.* Fatal cardiac ischaemia associated with prolonged desflurance anaesthesia and administration of exogenous catecholamines. Can J Anaesth 1998; 45: 1200–2.

More on equipment failure

To the Editor:

In Dr. Jolly's recent letter reporting the failure of a Baxter manual fluid pump,[1] the reply from Baxter indicated that 50 samples were all tested successfully. However, the reply failed to indicate the peak pressures generated during testing. Anyone with an understanding of materials engineering, however, would regard the maximum pressure the unit can handle before bursting to be an obvious safety parameter, one that would be subject to study and indicated, for example, on the package labeling.

I would suggest that sensible clinical design calls for the unit to tolerate internal pressures of 1000 mmHg. My reasoning is as follows. From clinical experience, I know that during some high-blood loss operations (such as liver transplants) it may be necessary to utilize hand-pump augmentation of blood or fluid bags with wrap-around pressure bag devices inflated to 300 or even 400 mmHg in order to keep up with the torrential blood loss. I would estimate that good strong hand-pumping on top of a ("red-line-region") baseline pressure of 400 mmHg, could add another 300 mmHg or more. Adding a small margin of safety brings us to 1000 mmHg.

From previous discussions with Baxter with regard to experiences with blood warmers bursting along a defective seam (during a liver transplant and in other cases), Baxter does not appear to have a formal pressure bursting specification that applies to all of their *iv* supplies.

Reference:

1 *Jolly DJ.* Manual pump failure. Can J Anesth 1999; 46: 201–2.

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REPLY:

The functional testing that is done on our Y-Type Blood/Solution Set with Pressure Pump, product code 2C7613, to qualify the Hand Pump is 30 psi, which is equivalent to 1552.5 mmHg. In addition, we conduct a 10 ± 1 psi (517.5 ± 51.75 mmHg) air pressure test on incoming hand pump lots to observe for leakage due to inadequate assembly or materials. Lastly, we air pressure test the finished sets at 8 psi, (414 mmHg).

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